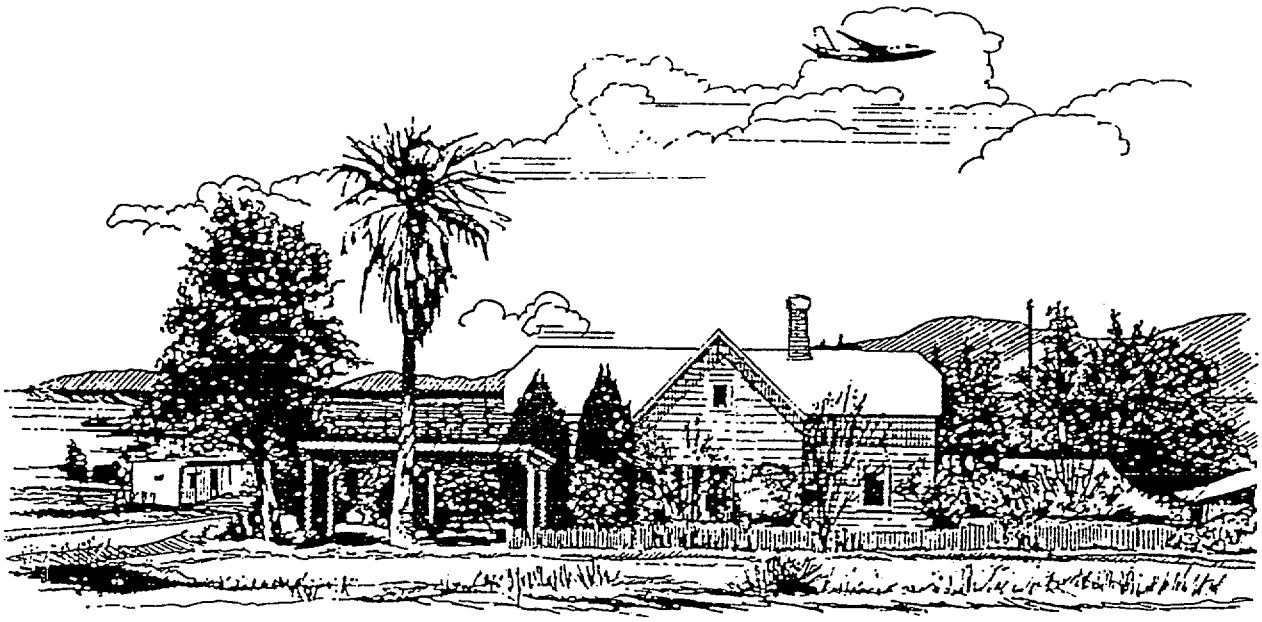
Chapter Six
ENVIRONMENTAL EVALUATION

H.A. Clark Memorial Field



Chapter Six
ENVIRONMENTAL EVALUATION

H.A. Clark Memorial Field

INTRODUCTION

Analysis of potential environmental impacts of proposed airport development projects is an important component of the Airport Master Plan process. The primary purpose of this chapter is to evaluate the proposed development program for H.A. Clark Memorial Field to determine whether proposed development actions could individually or collectively affect the quality of the environment.

A major component of this evaluation is to coordinate with appropriate federal, state, and local agencies to identify potential environmental concerns that should be considered prior to the design and construction of the new facilities at the airport. Agency coordination consisted of a letter requesting comments and/or information regarding the proposed airport development. Issues of concern that were identified as part of this process, are presented in the following discussion. The letters received from various agencies are included in **Appendix B.**

The major improvements planned for H.A. Clark Memorial Field will require compliance with the National Environmental Policy Act of 1969, as amended (NEPA). Compliance with NEPA is generally satisfied by the preparation of an Environmental Assessment (EA) or an Environmental Impact Statement (EIS). While this section of the master plan is not expected to satisfy NEPA requirements, it is intended to supply a preliminary review of environmental considerations that would need to be analyzed in more detail within the NEPA process.

This environmental evaluation includes a preliminary examination of each of the environmental resource categories outlined in the *Airport Environmental Handbook, FAA Order 5050.4A.*

PROPOSED DEVELOPMENT

As a result of the Master Plan analysis, a number of airport improvements have been recommended for implementation over the 20-year planning period. Sheets No. 2 and 3 (**Chapter 5.0**) illustrate the development proposed during this period. The following is a list of the major projects planned for completion.

- Land Acquisition
- Lengthening, Widening & Strengthening Runway
- Extension and Widening of Taxiways
- Construction of New Taxiways
- Construction of Commercial Service Terminal, and Associated Apron, and Automobile Parking Facilities
- Installation of Fuel Facilities
- Construction of Access Roads, Automobile Parking Facilities
- Construct New Conventional Hangar(s), T-Hangars and General Aviation Apron with Tiedowns
- Realign Roadway

ENVIRONMENTAL CONSEQUENCES - SPECIFIC IMPACTS

The following text briefly examines the airport development actions and their potential to cause significant environmental impact. The following subsections address each of the specific impact categories outlined by *FAA Order 5050.4A*.

NOISE

Aircraft sound emissions are often the most noticeable environmental effect an airport will produce on the surrounding community. If the sound is sufficiently loud or frequent in occurrence, it may interfere with various activities or otherwise be considered objectionable.

To determine noise related impacts that the proposed development could have on the environment surrounding H.A. Clark Memorial Field, noise exposure patterns were analyzed for the year 2015. This year represents the highest number of forecast aircraft operations of the 20-year planning period.

Noise Contour Development

The basic methodology employed to define aircraft noise levels involves the use of a mathematical model for aircraft noise prediction. The *Yearly Day-Night Average Sound Level (DNL)* is used in this study to assess aircraft noise. DNL is the metric currently accepted by the Federal Aviation Administration (FAA), Environmental Protection Agency (EPA), and the Department of Housing and Urban Development (HUD) as an appropriate measure of cumulative noise exposure. These three federal agencies have each identified the 65 DNL noise contour as the threshold of incompatibility, meaning levels below 65 DNL are considered compatible with all underlying land uses. Most federally funded airport noise studies use DNL as the primary metric for evaluating noise.

DNL is defined as the average A-weighted sound level as measured in decibels (Db), during a 24-hour period; a 10 Db penalty is applied to noise events occurring at night (10:00 p.m. to 7:00 a.m.). DNL is a summation metric which allows objective analysis and can describe noise exposure comprehensively over a large area.

Since noise decreases at a consistent rate in all directions from a source, points of equal

DNL noise levels are routinely indicated by means of a contour line. The various contour lines are then superimposed on a map of the airport and its environs. It is important to recognize that a line drawn on a map does not imply that a particular noise condition exists on one side of the line and not on the other. DNL calculations do not precisely define noise impacts. Nevertheless, DNL contours can be used to: (1) highlight existing or potential incompatibilities between an airport and any surrounding development; (2) assess relative exposure levels; (3) assist in preparation of airport environs land use plans; and (4) provide guidance in the development of land use control devices, such as zoning ordinances, subdivision regulations and building codes.

The noise contours for H.A. Clark Memorial Field were developed from the Integrated Noise Model, Version 4.11. The Integrated Noise Model (INM) was developed by the Transportation Systems Center of the U.S. Department of Transportation at Cambridge, Massachusetts, and has been specified by the FAA as one of two models acceptable for federally funded noise analysis.

The INM is a computer model which accounts for each aircraft along flight tracks during an average 24 hour period. These flight tracks are coupled with separate tables contained in the data base of the INM which relate to noise, distances and engine thrust for each make and model of aircraft type selected.

Estimates of existing aircraft operations and forecasts of future aviation activity are used as input to the noise model. Forecasts of future aviation activity at H.A. Clark Memorial Field were developed as part of the planning process.

Computer input files for the noise analysis assumed implementation of the ultimate development of the airport as identified in **Chapter 5.0, Airport Plans.** The input files contained operational data, runway utilization, aircraft flight tracks, and fleet mix as projected in the plan. The operational data and aircraft fleet mix used are summarized in **Table 6A, Aviation Forecast Summary.** For more detailed information on the aviation forecasts for H.A. Clark Memorial Field refer to **Chapter 2.0, Aviation Demand Forecasts.** The noise contours also assumed use of Runway 36, 60 percent of the time, and Runway 18, 40 percent.

TABLE 6A
Annual Aircraft Operations, 2015
Noise Modeling Input

	2015
Aircraft Type	
Single Engine (GASEPV)	4,860
Multi Engine (BEC58P)	660
Turbo Prop (DHC 6)	310
DC 4 (DC 6)	5,750
Turbo Jet (Citation III)	50
Rotorcraft (JRNGR)	120
Total Annual Operations	**11,750**

Results of Noise Analysis

The aircraft noise contours generated from aviation forecasts for H.A. Clark Memorial Field are presented on the **Land Use/Noise Plan, Sheet 6, Chapter 5.0.** While the 65 DNL is the currently excepted threshold of incompatibility, the 60 DNL noise contour has also been shown since this airport is in a rural setting, where ambient noise levels are lower.

On runway centerline, the 65 DNL contour extends approximately 5,550 feet north of the existing runway end, and 2,950 feet south of the existing runway end. The

noise contour extends notably farther to the north since the noise analysis assumed a 2,000-foot extension to the north. Most of the 65 DNL noise contour area would remain within the proposed future airport property boundary. The 60 DNL noise contour extends roughly 8,400 feet north of and 5,850 south of the existing runway ends.

COMPATIBLE LAND USE

Aircraft noise contours can be used as a guide to determine potential incompatible land uses in the vicinity of airports. To identify noise sensitive land uses potentially impacted by aircraft noise, the noise contours are overlaid on current and future land use maps for the airport and vicinity.

Federal Aviation Regulation (F.A.R.) Part 150 recommends guidelines for planning land use compatibility within various levels of aircraft noise exposure (**Table 6B, Land Use Guidelines**). As the name indicates, these are guidelines only; F.A.R. Part 150 explicitly states that determinations of noise compatibility and regulation of land use are purely local responsibilities.

These guidelines indicate that mobile home parks, outdoor music shells and amphitheaters are incompatible within areas effected by noise levels above 65 DNL. However, the federal guidelines note that, where local communities determine that these uses are permissible, sound attenuation measures should be used. Several other uses, including hospitals, nursing homes, churches, auditoriums, livestock breeding, amusement parks, resorts, and camps, are considered incompatible at levels above 75 DNL.

Experience has shown that new residential development should be prohibited in areas subject to noise exceeding 65 DNL, unless local conditions indicate that soundproofed residences would not be adversely impacted by noise. The most obvious condition would be the presence of high background noise levels which are often found in high-density urban areas.

Where existing residential uses occur, further expansion should be discouraged. Measures to mitigate noise impacts should be taken if further residential development cannot be prevented. In some communities where there is a severe shortage of developable land, local governments often are compelled to permit more residential development within the 65 DNL contour. In such cases, the FAA strongly recommends soundproofing. Noise easements as a condition of development approval might also be required.

TABLE 6B Land Use Guidelines	Yearly Day-Night Average Sound Level (DNL) In Decibels (Db)					
RESIDENTIAL	Below 65	65-70	70-75	75-80	80-85	Over 85
Residential, other than mobile homes and transient lodgings	Y	N[1]	N[1]	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N[1]	N[1]	N[1]	N	N
PUBLIC USE						
Schools	Y	N[1]	N[1]	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Government services	Y	Y	25	30	N	N
Transportation	Y	Y	Y[2]	Y[3]	Y[4]	Y[4]
Parking	Y	Y	Y[2]	Y[3]	Y[4]	N
COMMERCIAL USE						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail-building materials, hardware and farm equipment	Y	Y	Y[2]	Y[3]	Y[4]	N
Retail trade-general	Y	Y	25	30	N	N
Utilities	Y	Y	Y[2]	Y[3]	Y[4]	N
Communication	Y	Y	25	30	N	N
MANUFACTURING AND PRODUCTION						
Manufacturing, general	Y	Y	Y[2]	Y[3]	Y[4]	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y[6]	Y[7]	Y[8]	Y[8]	Y[8]
Livestock farming and breeding	Y	Y[6]	Y[7]	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
RECREATIONAL						
Outdoor sports arenas and spectator sports	Y	Y[5]	Y[5]	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts, and camps	Y	Y	Y	N	N	N
Golf courses, riding stables, and water recreation	Y	Y	25	30	N	N

The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under F.A.R. Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

See following page for notes and key to table.

TABLE 6B (Continued)
Land Use Guidelines

KEY	
Y (Yes)	Land Use and related structures compatible without restrictions.
N (No)	Land Use and related structures are not compatible and should be prohibited.
NLR	Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
25, 30, 35	Land Use and related structures generally compatible; measures to achieve NLR of 25, 30 or 35 Db must be incorporated into design and construction of structure.

NOTES	
1	Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to Indoor Noise Level Reduction (NLR) of at least 25 Db and 30 Db should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 Db, thus, the reduction requirements are often stated as 5, 10, 15, Db over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.
2	Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
3	Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
4	Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
5	Land use compatible provided special sound reinforcement systems are installed.
6	Residential buildings require a NLR of 25.
7	Residential buildings require a NLR of 30.
8	Residential buildings not permitted.

SOURCE: F.A.R. Part 150, Appendix A, Table 1.

Based on the results of the noise modeling efforts for the year 2015, the 65 DNL noise contour would not extend over residential structures, schools, houses of worship or other uses considered to be noise sensitive **(Sheet 6, Chapter 5.0).** The closest noise-sensitive land uses would be Camp Civitan and Pronghorn Ranch, both located within the 60 DNL contour. On the south end of the runway, the 60 and 65 DNL contour

each extend over a portion of Threemile Lake.

The land area included within **Land Use/Noise Plan, Sheet 6, Chapter 5.0,** approximates the extent of the *Airport Influence Area*. As explained in **Chapter 5.0, Land Use/Noise Plan,** this area encompasses the 60 DNL and above noise contours and the general area of low-level aircraft movements, or those aircraft involved in landing or taking off. Low-level aircraft movements are important because they are more likely to influence land uses located underneath. While a number of potential uses would be considered compatible within the Airport Influence Area outside of the 65 DNL noise contour, it would be prudent to limit the development of noise-sensitive land uses within this area to the extent possible. Residents located near airports, and particularly those located within the approach areas of the runways, often complain about aircraft noise and overflights.

In consideration of aircraft noise characteristics and consistent with existing zoning, the area outside of the airport property line has been categorized as Open Space/Conservation Zone on the **Land/Use Noise Plan, Chapter 5.0.** While this area is designated for open space and conservation, it is important to note that a number of other land uses would be considered compatible within the *Airport Influence Area*. These other uses, which include most agricultural operations, commercial and industrial land uses, can generally function under higher noise exposure levels, and would be less likely to be adversely impacted by aircraft noise or overflights.

SOCIAL IMPACTS

Social impacts known to result from airport improvement projects are often associated with the relocation of residences or businesses or other community disruptions. Ultimately development of the proposed improvements would require the removal of eight individually-owned aircraft hangars located on the existing ramp to be replaced with new hangar facilities on a new ramp farther north along the flightline. In addition, the ultimate airport plans call for the realignment of a portion of FR 16 in the vicinity of the airport.

The relocation of eight hangars would need to be completed in accordance with all applicable FAA criteria, including *FAA Order 5100.37A, Chapter 3.0, Acquisition of Real Property*. It is also important to note that one of these hangars houses a business that serves the aviation community. Consideration will need to be given to the relocation of this business to minimize potential inconvenience and loss of revenue.

The portion of FR 16 proposed for realignment does serves primarily "through traffic" rather than local destinations and, as such, its realignment would not be expected to affect access to existing land uses. Its realignment would not be expected to significantly change surface transportation patterns or to increase travel distance or time to roadway users.

Development of the proposed airport improvements is not expected to require the relocation of any residences, however, the buildings associated with Camp Civitan would be located just 300 feet outside of the proposed future runway protection zone.

The proposed development and associated land acquisition are not anticipated to divide or disrupt an established community, interfere with orderly planned development, or create a short-term, appreciable change in employment.

INDUCED SOCIOECONOMIC IMPACTS

Induced socioeconomic impacts address those secondary impacts to surrounding communities resulting from the proposed development, including shifts in patterns of population movement and growth, public service demands, and changes in business and economic activity to the extent influenced by the airport development. According to *FAA Order 5050.4A*, "Induced impacts will normally not be significant except where there are also significant impacts in other categories, especially noise, land use or direct social impacts."

Significant shifts in patterns of population movement or growth or public service demands are not anticipated as a result of the proposed development. It is expected, however, that the proposed new airport development would potentially induce positive socioeconomic impacts for the community over a period of years. The airport, with expanded facilities and services, as well as plans for an industrial park, aviation recreational area, and a commercial tour operation, would be expected to attract additional users. It is expected to encourage tourism, industry, and trade and to enhance the future growth and expansion of the community's economic base. Future socioeconomic impacts resulting from the proposed development would be expected to be primarily positive in nature.

AIR QUALITY

The federal government has established a set of health-based ambient air quality standards (NAAQS) for the following six pollutants: carbon monoxide (CO), nitrogen dioxide (NO_x), sulphur dioxide (SO_x), ozone, lead, and PM10 (particulate matter of 10 microns or smaller). The proposed project is located in an air quality attainment area, that is, an area which currently meets federal health standards for air pollution levels, including particulates.

The Arizona Department of Environmental Quality (ADEQ), Air Quality Planning Section, was contacted to determine the potential impacts the proposed development would have on air quality. In their response they note that "no significant adverse air quality impact is anticipated as a result of the project." The did, however, request that during construction steps be taken to minimize the amount of particulate matter (dust) generated, including incidental emissions caused by strong winds, as well as tracking of dirt off the construction sites by machinery and trucks.

The generation of fugitive dust as a result of construction activities is anticipated due to the movement of heavy construction equipment and the exposure and disturbance of surface soils. This impact is expected to be both temporary and localized. To minimize impacts, ADEQ recommended the following preventive and mitigative measures be taken for all construction projects.

Site Preparation

a. Minimize land disturbance;
b. Use watering trucks to minimize dust;
c. Cover trucks when hauling dirt;
d. Stabilize the surface of dirt piles if not removed immediately;

e. Use windbreaks to prevent any accidental dust pollution;
f. Limit vehicular paths and stabilize these temporary roads;
g. Grade to prevent soil from washing onto paved roadways; and
h. Pave all unpaved construction roads and parking areas to road grade for a length no less than 50 feet where such roads and parking areas exit the construction site to prevent dirt from washing onto pave roadways.

Construction

a. Cover trucks when transferring materials;
b. Use dust suppressants on traveled paths that are not paved;
c. Minimize unnecessary vehicular and machinery activities: and
d. Minimize dirt track-out by washing or cleaning trucks while stationed on a paved surface before leaving the construction site.

Post Construction

a. Revegetate any disturbed land not used;
b. Remove unused material;
c. Remove dirt piles; and
d. Revegetate all vehicular paths created during construction to avoid future off-road vehicular activities.

The ADEQ Air Quality Planning Section also enclosed applicable state rules from A.A.C. R18-2-604 through R18-2-610 (see **Appendix B**). They also noted that portable sources of air pollution such as rock, sand, gravel and asphaltic concrete plants are required to be permitted by ADEQ prior to commencing operations.

An air quality certification must be pursued during the NEPA process for the proposed runway extension, pursuant to *FAA Order 5050.4A*. This Order states that "the 1982 Airport Act requires that Airport Improvement Program applications for projects involving airport location, runway location, or a major runway extension shall not be approved unless the governor of the state in which the project is located certifies that there is "reasonable assurance" that the project will be located, designed, constructed, and operated in compliance with applicable air and water quality standards."

WATER QUALITY

Water quality concerns, related to airport expansion most often relate to domestic sewage disposal, increased surface runoff and soil erosion, and the storage and handling of fuel, petroleum, solvents, etc.

A water quality certification must be pursued during the NEPA process for the proposed runway extension, pursuant to *FAA Order 5050.4A* (refer to preceding section on air quality).

Sanitary sewage disposal for the airport is provided through individual septic systems. With the proposed expansion, and particularly in light of the number of passengers anticipated with the proposed Classic Air operations, the generation of sanitary sewage on the airport would be expected to increase. While septic systems would likely be adequate for the short term, connection with the City's sanitary sewer system in the future will likely be required if anticipated passenger levels are reached.

Construction of the proposed improvements will result in an increase in impermeable surfaces and a resultant increase in surface runoff from both landside and airside facilities. The proposed development might result in short-term impacts on water

quality, particularly suspended sediments, during and shortly after precipitation events during the construction phase. Recommendations established in FAA Advisory Circular 150/5370-10 *Standards for Specifying Construction of Airports, Item P-156, Temporary Air and Water Pollution, Soil Erosion and Siltation Control* should be incorporated in project design specifications to mitigate potential impacts. These standards include temporary measures to control water pollution, soil erosion, and siltation through the use of fiber mats, gravel, mulches, slope drains, and other erosion control methods.

In accordance with Section 402(p) of the *Clean Water Act*, as added by Section 405 of the *Water Quality Act of 1987*, a *National Pollution Discharge Elimination System* (NPDES) General Permit is required from the Environmental Protection Agency. NPDES requirements apply to industrial facilities, including airports and all construction projects that disturb five or more acres of land.

With regard to construction activities, the City of Williams and all applicable contractors will need to comply with the requirements and procedures of the NPDES General Permit, including the preparation of a *Notice of Intent* and a *Stormwater Pollution Prevention Plan*, prior to the initiation of project construction activities.

The construction program, as well as specific characteristics of project design, should incorporate *Best Management Practices* (BMPs) to reduce erosion, minimize sedimentation, control non-stormwater discharges, and protect the quality of surface water features potentially affected. BMPs are defined as nonstructural and structural practices that provide the most efficient and practical means of reducing or preventing pollution of stormwater. The selection of these practices at H.A. Clark Memorial Field should be based on the sites characteristics and focus on those categories of erosion factors within the contractor's control, including: (1) construction scheduling, (2) limiting exposed areas, (3) runoff velocity reduction, (4) sediment trapping, and (5) good housekeeping practices. Inspections of the construction site and associated reporting may be required.

Spills, leaks and other releases of hazardous substances into the local environment are often a concern at airports due to fuel storage, fueling activities and maintenance of aircraft. Stormwater flowing over impermeable surfaces may pick up petroleum product residues and, if not controlled, transport them off site.

Also of crucial concern would be spills or leaks of substances that could filter through the soils and contaminate groundwater resources. As growth in aviation activity continues, fuel storage facilities will be necessary. Fuel storage facilities must be designed, constructed and maintained in compliance with Federal, State and Local regulations, and must be registered with ADEQ. These regulations include standards for underground storage tank construction materials, the installation of leak or spill detection devices, and regulations for stormwater discharge. Refer to **Appendix B** for additional detail.

According to a letter received from the ADEQ, Waste Programs Division, the City of Williams as well as owners and operators of activities at the airport that generate waste must determine if their waste is hazardous. "In addition, owners and operators must provide the proper handling and accumulation of those wastes until proper transport to an approved off-site treatment, storage or disposal facility

occurs." Special requirements must also be followed for the transportation and disposal of used oil. "Solid waste generated by the development must go to an ADEQ-approved facility. If solid waste is stored on site for greater than 90 days, or will be treated or disposed on site, facility approval may be required."

Specific concerns related to water quality of surface water features in the area surrounding H.A. Clark Memorial Field were expressed in letters from the Northern Arizona Council of Governments and the ADEQ, Point Source Unit. According to ADEQ, a surface water hydraulic connection exists between the Colorado River and H.A. Clark Memorial Field via Havasu Creek, Cataract Creek, and other unnamed washes. The following recommendations were presented from ADEQ in response to these concerns. Please note that several of these measures address other environmental considerations besides water quality.

1. Where applicable the Management Agency and or Owner/Operator shall over-site an construction to ensure that discharges from the watershed or to all Waters of the State/Waters of the U.S. shall meet all applicable Water Quality Standards;

2. BMP's should be implemented during and after all construction phases to protect watershed condition and riparian areas, to maintain adequate vegetative cover, and to minimize the discharge of sediment, petroleum, nutrients, bacteria and other pollutants to the Colorado River via Havasu Creek, Cataract Creek, and unnamed washes watershed;

3. BMP's should be implemented for construction activities for mechanical equipment to minimize ground disturbance to protect watershed condition and riparian areas;

4. A monitoring program should be implemented to evaluate the effectiveness of BMP's in protecting watershed condition and Waters of the State;

5. Where applicable, the Management Agency and or Owner/Operator shall demonstrate a knowledge of waste streams, permits and hazardous materials handling as well as indicate the destination of each hazardous waste being disposed off-site;

6. Construction activities for mechanical equipment need to minimize the amount of particulate matter generated, including incidental emissions caused by strong winds, and tracking of dirt off the construction site by mechanical equipment;

7. Be aware that portable sources of air pollution ie. rock, sand, gravel and asphaltic concrete plants are required to be permitted by ADEQ prior to commencing operations. Contractors and subcontractors may also be required to comply with these regulations;

8. All solid wastes generated by the activity shall be transported to an ADEQ approved facility. Waste stored on site for more than 90 days, or that treated or disposed of on-site, may require facility approval;

9. Sanitary waste facilities provided during construction phases shall be planned and developed in such a manner to ensure protection of both surface and groundwater resources;

10. A Clean Water Act, Section 404 Permit may be required for the discharge of dredged or fill material into navigable waters;

11. A.A.C. R18-11-109, Surface Water Quality Standards Rules must be complied with as set forth in Section G of ADEQ, Non-Point Source Unit letter dated September 14, 1994;

DEPARTMENT OF TRANSPORTATION ACT, SECTION 4(F) LANDS

Paragraph 47e, *FAA Order 5050.4A* provides the following.

> *(7)(a) "Section 4(f) provides that the Secretary shall not approve any program or project which requires the use of any publicly-owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state or local significance, or any land from an historic site of national, state or local significance as determined by the officials having jurisdiction thereof unless there is no feasible and prudent alternative to the use of such land and such program includes all possible planning to minimize harm."*
>
> *(7)(b) "...When there is no physical taking but there is the possibility of use of or adverse impacts to Section 4(f) land, the FAA must determine if the activity associated with the proposal conflicts with or is compatible with the normal activity associated with this land. The proposed action is compatible if it would not affect the normal activity or aesthetic value of a public park, recreation area, refuge, or historic site. When so construed, the action would not constitute use and would not, therefore, invoke Section 4(f) of the DOT Act."*

Since the airport is surrounded by Forest Service lands, the proposed expansion of airside and landside facilities outside of existing airport boundaries, would necessitate expansion of the airport's boundaries through an expanded special use permit, purchase or land exchange.

Officials of the Kaibab National Forest will need to be contacted to determine whether forest property would be considered Section 4(f). If it would, consideration would need to be given to whether the proposed property acquisition would be considered a "taking" of Section 4(f) property.

HISTORIC, ARCHITECTURAL, ARCHAEOLOGICAL AND CULTURAL RESOURCES

The Arizona State Historic Preservation Officer (SHPO) was contacted regarding the potential presence of cultural resources within the area of the proposed development. In their response dated September 22, 1994 (**Appendix B**), they stated the following. "...Our records indicate that various cultural resources inventories in the vicinity have revealed the presence of archaeologic sites. Thus, it is possible that significant cultural resources may be present within the airport and the proposed expansion areas...." For this reason, they recommend that prior to the initiation of ground-disturbing activities, those areas proposed for development be surveyed by a qualified archaeologist to locate and evaluate any existing cultural remains.

In addition, should archaeologic resources be encountered during any preconstruction

or construction activities, work should cease in the area of the discovery and the SHPO be notified immediately, pursuant to 36 CFR 800.11.

BIOTIC COMMUNITIES AND THREATENED AND ENDANGERED SPECIES OF FLORA AND FAUNA

As part of this evaluation, the U.S. Department of the Interior, Fish and Wildlife Service (USFWS) and the Arizona Game and Fish Department (AG&F) were contacted to request information regarding potential impacts to threatened or endangered species or species of special concern. According to the response from AG&F, no indication was expressed regarding the potential for threatened or endangered species to be impacted by the proposed development. To date, no response has been received from the USFWS. Follow up with the USFWS will be necessary as part of the NEPA process.

AG&F did indicate several other concerns, however. They noted that Threemile Lake, located near the south end of the runway, is a naturally occurring wetland that in the past has attracted wildlife species. They expressed an interest in diverting runoff from the airport to Threemile Lake for use by wildlife. In addition, AG&F and the U.S. Department of Agriculture, Soil Conservation Service (SCS) both strongly suggest that a wildlife-proof fence be constructed around the perimeter of the runway to minimize the potential for collisions between aircraft and elk or deer. According to the letter from the SCS dated September 26, 1994, the fence should be a minimum of eight (8) feet tall, chain link with additional guard wires on top, or the equivalent. The fence would also control livestock.

Based on FAA guidance on the issue of birdstrikes and wildlife hazards with regard to airports, it may not be advisable to enhance the potential for Threemile Lake to attract wildlife and birds (Advisory Circular 150/5200-32 - *Airport Wildlife Hazard Management*, Order 5200.5A - *Waste Disposal Sites on or Near Airports*, Draft Advisory Circular 150/5200 - *Wildlife Attractions on or Near Airports*). The construction of a wildlife-proof fence around the perimeter of the airport on the other hand would minimize the potential for conflicts between wildlife and aircraft and should be considered as a part of the airport's development plan.

In cooperation with the U.S. Forest Service, the City of Williams has been exploring the potential feasibility of constructing a wastewater wetland project to serve the City of Williams. To that end, a study was completed in February of 1994, entitled *Williams Wastewater Wetland Project Preliminary Planning and Feasibility Study*. The results of study efforts identified one potential site in the area, located roughly 5,000 feet southeast of Runway 18-36, H.A. Clark Memorial Field. Due to its proximity to the airport and its potential to attract birds, information about the proposal was forwarded to the FAA for their review and comment. Their response is pending.

COASTAL MANAGEMENT PROGRAM AND COASTAL BARRIERS

The proposed development of H.A. Clark Memorial Field is not located within the jurisdiction of a State Coastal Management Program. The Coastal Zone Barrier resources system consists of undeveloped coastal barriers along the Atlantic and Gulf Coasts. These resources are well outside of the sphere of influence of H.A. Clark

Memorial Field and its vicinity, and do not apply to the proposed development.

WILD AND SCENIC RIVERS

The proposed development of H.A. Clark Memorial Field is not located within the vicinity of a designated wild and scenic river.

WATERS OF THE U.S., INCLUDING WETLANDS

According to correspondence from AG&F and the Northern Arizona Council of Governments (September 12, 1994), Threemile Lake is a naturally occurring wetland. As part of the NEPA process, the airport sponsor should request a jurisdictional delineation from the U.S. Army Corps of Engineers for that area including the future proposed airport property as well as a buffer around the airport. This delineation would identify any *waters of the U.S.*, including wetlands, under jurisdiction of this agency. If proposed construction could directly or indirectly affect these waters, the project might require a Corps permit per Section 404 of the Clean Water Act.

While there is no delineation available for the airport at this time, it is not anticipated that proposed construction would directly impact Threemile Lake. Construction activities and drainage design characteristics will need to prevent airport runoff from reaching Threemile Lake or other waters of the U.S.

FLOODPLAINS

To determine if any designated 100-year floodplain occurs on the airport or its immediate vicinity, the Coconino County Community Development Department was contacted. Based on Federal Emergency Management Act (FEMA) maps and associated data, they noted that the airport is located in an area designated as *Zone D*. Zone D is defined as areas of undetermined, but possible, flood hazards. The airport's flood hazard potential should be considered within the EA process. Refer to **Water Quality** section of this chapter for discussion of surface water quality concerns expressed by the ADEQ, Non-point Source Unit.

FARMLAND

According to a response from the U.S. Department of Agriculture, Soil Conservation Service, dated September 26, 1994, the U.S. Forest Service soil mapping would reveal whether prime farmland is found in the location of the proposed development. According to preliminary discussions with officials of the U.S. Forest Service, soil mapping is available for the airport environs, however, it is unlikely that prime farmland would be located on the airport or immediately adjacent to it.

ENERGY SUPPLY AND NATURAL RESOURCES

No concern regarding existing energy production facilities or known energy resource supplies was expressed by the agencies for this proposed development. A slight increase in energy demand will likely occur as a result of the proposed project. Additional electricity will be needed for the proposed runway and taxiway extensions, new navigation lights, the terminal building, hangars and parking areas. In addition to this electric demand, expenditures of manpower, fuel, electricity,

chemicals, water and other forms of energy will be necessary to construct the improvements and to provide for maintenance and operation of the facilities.

LIGHT EMISSIONS

The proposed lighting improvements for the 20-year development plan include the installation of Medium Intensity Taxiway Lighting (MITL) on the parallel taxiway and Medium intensity runway lighting (MIRL) on the extension of Runway 18-36. In addition, proposed development includes the installation of an NDB/GPS, a PAPI system and REILs (refer to **Chapter 3.0** for more detail on these facilities). It is also anticipated that outdoor lighting would be installed within the automobile parking areas, aircraft parking apron and surrounding all terminal and FBO buildings and hangars. The new facilities with the most potential to cause light emission impacts are the REILs. Consideration should be given to potential light impacts as a part of the NEPA process.

Few light-sensitive land uses are located close enough to the airport to be negatively affected by additional light emissions. The one possible exception is Camp Civitan located near the north end of Runway 18-36.

SOLID WASTE

Increases in the generation of solid waste are anticipated as a result of the proposed development and overall growth in aviation activity including the proposed tour operation. The City of Williams collects these wastes, transports them to a transfer station near the intersection of Rodeo and Airport Roads, roughly four miles from the airport. There the waste is compacted and hauled to a City of Flagstaff landfill, located over 30 miles from the airport.

Because landfills can attract birds for feeding, the location of landfills near airports is not desired. There are no known existing, proposed or closed landfills or transfer stations within 3000 meters or 9,843 feet of either runway at H.A. Clark Memorial Field.

CONSTRUCTION IMPACTS

Construction activities have the potential to create temporary environmental impacts at the airport. These impacts will primarily relate to noise resulting from heavy construction equipment, fugitive dust emissions resulting from construction activities, and potential impacts on water quality from runoff and soil erosion from exposed surfaces.

A temporary increase in particulate emissions and fugitive dust may result from construction activities. The use of temporary dirt access roads would increase the generation of particulates. Dust control measures, such as watering exposed soil areas, will need to be implemented to minimize this localized impact.

Any necessary clearing and grubbing of construction areas should be conducted in sections or sequenced to minimize the amount of exposed soil at any one time. All vehicular traffic should be restricted to the construction site and established roadways.

The provisions contained in *Standards for Specifying Construction of Airports, FAA Advisory Circular 150/5370/10A, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control* will be incorporated into all project specifications. During

construction, temporary dikes, basins and ditches should be utilized to control soil erosion and sedimentation and prevent degradation of off-airport surface water quality. After construction is complete, slopes and denuded areas should be reseeded to aid in the vegetation process.

CONCLUSION

Based on the review of correspondence provided by various federal, state and local agencies, potential environmental issues and considerations anticipated as a result of the development and operation of H.A. Clark Memorial Field have been identified.

As a result of the NEPA process, mitigation measures may be recommended to limit the potential impacts related to a number of these resources. Please note that as more specific information is gathered through a formal Environmental Assessment process, additional issues may arise.